Cisco Video Surveillance 6400 IP Camera Installation Guide

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Preface

Overview

This document, *Cisco Video Surveillance 6400 IP Camera Installation Guide*, provides information about installing and deploying the Cisco Video Surveillance 6400 High-Definition IP Camera.

Organization

This manual is organized as follows:

Chapter 1, "Overview"	Provides an overview of the IP camera and its features.
Chapter 2, "Camera Installation"	Provides instructions for physically installing the IP camera.
Chapter 3, "Performing the Initial Setup of the IP Camera"	Provides instructions for performing the initial network setup of the IP camera.
Chapter 4, "Camera Management"	Provides instructions for accessing and understanding the IP camera user interface, adjusting its focus and, powering the IP camera on and off, and resetting the IP camera.

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CHAPTER 1

Overview

This chapter describes the Cisco Video Surveillance 6400 High-Definition IP Camera, and includes the following topics:

- Introduction, page 1-1
- Package Contents, page 1-2
- IP Camera Physical Details, page 1-2

Introduction

The Cisco Video Surveillance 6400 IP camera offers 1080p HD resolution with superb image quality. The 6400 is a high-end bullet camera with outdoor-specific features, such as concealed wiring to prevent tampering, which makes it the camera of choice for applications such as parking lots, gas stations, and building entrances.

The 6400 boasts high-definition 2-megapixel (1920 x 1080) resolution, allowing for the delivery of extremely detailed images and coverage six times larger than a VGA camera. To maximize the benefit of the 2-megapixel sensor, the 6400 employs several innovative technologies for optimized bandwidth efficiency. Furthermore, multiple video streams can be delivered simultaneously in different resolutions, frame rates, and image qualities for viewing on different platforms to meet different needs or bandwidth constraints. The 6400 also offers activity adaptive streaming support that dynamically allocates bandwidth according to the video content and trigger state.

Aimed at outdoor surveillance, the 6400 features auto-iris capability to protect the lens from damage induced by direct sunlight. To adapt to light changes throughout the day, the camera is furnished with am automatic IR-cut filter and IR illuminators for superior image quality around the clock. The 6400 also comes with an IP66-rated housing that offers protection against rain and dust to ensure functional operation in all types of weather conditions. For easy management and protection against tempering and vandalism, the 6400 is also equipped with a mounting bracket that conceals all cables within the bracket.

With other advanced features such as 802.3af compliant PoE and micro SD/SDHC card for onboard storage, the 6400 is a full-fledged surveillance solution for outdoor environments.

Package Contents

The Cisco Video Surveillance 6400 IP Camera package includes the following items:

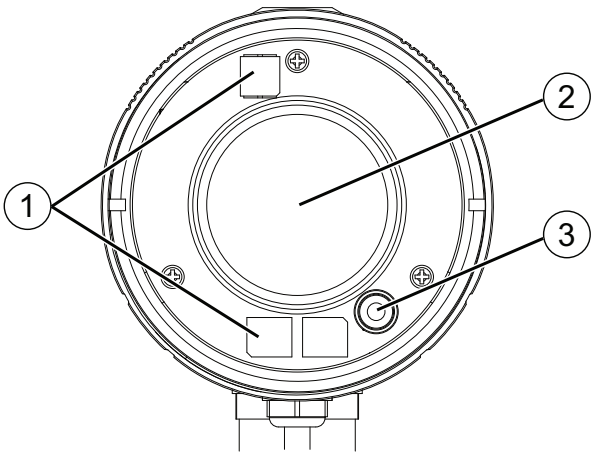
- Cisco Video Surveillance 6400 IP camera (1)
- Mounting plate alignment sticker (1)
- Wall mount bracket with mounting plate (1)
- Waterproof connector assembly for RJ45 Ethernet enclosure (1)
- Waterproof connector assembly for power and I/O cables (1)
- Sun shield(1)
- Standoff screws (2)
- Screws (6)
- Double sided tape (1)
- Silica gel (1)
- Pad (1)
- Cisco pointer card (1)
- RoHS Document (1)

IP Camera Physical Details

Front View

Figure 1-1 and the table that follows describe the front view of the 6400 IP camera.

Figure 1-1 Front View of IP Camera

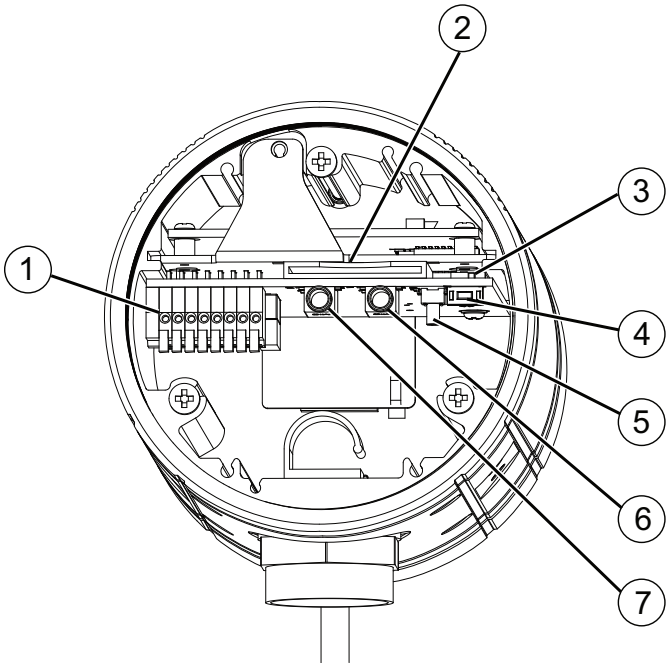


1	Single reflector illuminator LEDs (SRLEDs)	IR LEDs that enhance the video image when the IP camera is running in night mode.
2	Varifocal lens	IP camera lens that changes focus as the focal length changes.
3	Light sensor	Senses the level of ambient light to determine when to switch day/night mode.

Back View

Figure 1-2 and the table that follows describe the back view of the 6400 IP camera.

Figure 1-2 Back View of IP Camera



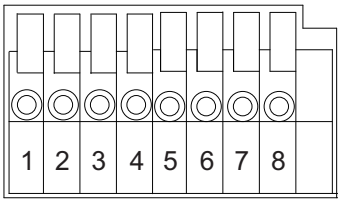
1	General Purpose I/O (GPIO) terminal block	GPIO terminal block that is used to connect external input and output devices. For more information, see Figure 1-3.
2	SD/SDHC card slot	The IP camera is compliant with Micro SD/SDHC (up to 32GB) and other preceding standard SD cards.
3	Video output switch	Switches the video output between to following standards: • NTSC 60Hz (up)—switches camera operation to the National Television System Committee (NTSC) standard. • PAL 50Hz (down)—switches camera operation to the Phase Alternating Line (PAL) standard.
4	Focus assist button	Used in conjunction with an analog display to fine tune the IP camera focus.

5	Reset button	Reboots the IP camera or resets it to a default state. Depending on how long you depress the reset button, you can do either of the following: • Reset—Press and release the reset button. Wait for the IP Camera to reboot. • Restore—Press and hold the reset button for about 30 seconds. All settings will be restored to factory default.
6	Audio/Video out (green)	Allows the connection of an optional Y cable or mini cable with BNC connector. You can connect a video monitor to the mini cable with BNC connector. Both cables are included in the optional audio/video cables accessory kit can be purchased from Cisco (Cisco part number CIVS-AVCABLE). **Note** Support for audio will be in future releases.
7	Microphone In (pink)	Connection for an external microphone.

General Purpose I/O Terminal Block

Figure 1-3 shows the GPIO terminal block pin locations and descriptions.

Figure 1-3 GPIO Terminal Block Pin Locations and Descriptions



Pin	Description
1	12 VDC-
2	12 VDC+
3	24 VAC
4	24 VAC
5	DI-
6	DI+
7	DO-
8	DO+

Note The maximum output load from pins 7 and 8 is 400mA.

CHAPTER 2

Camera Installation

This chapter provides information and instructions for installing the Cisco Video Surveillance 6400 IP Camera, and includes the following topics:

- Installation Guidelines, page 2-1
- Warnings Before Installation, page 2-2
- Installing the IP Camera, page 2-3
- Connecting External Power and I/O Cables, page 2-5
- Connecting a Waterproof Ethernet Cable, page 2-8
- Installing the Sun Shield, page 2-9

Installation Guidelines

This section describes how to install the IP camera. Before installing, review these guidelines:

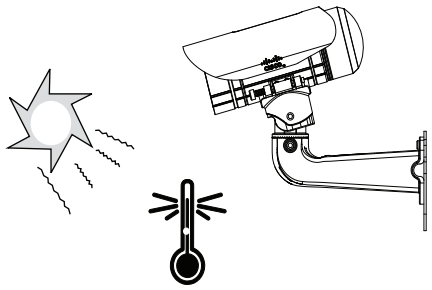
- The IP camera requires a network cable and a connection to a standard 10/100BaseT router or switch. To power the IP camera with Power over Ethernet (PoE), a switch must be 802.3af compliant.
- If you are using the IP camera on a network connection that does not provide PoE, you must use a Cisco 12 VDC power adapter (Cisco part number CIVS-PWRPAC-12V) or a third-party 24 VAC power adapter.
- If you are using an input device, output device, or pan/tilt control device, you must configure additional settings after installing and performing the initial set up of the IP camera before the external device can fully operate. For detailed information about these settings, see the *Cisco Video Surveillance 6000 Series IP Camera Configuration Guide*.
- If you do not connect an external device (input, output, or pan/tilt control) when you perform the following installation procedure, you can install any of these devices later.

Warnings Before Installation

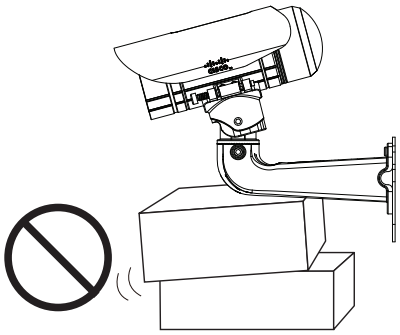
- **Power off the Network Camera as soon as smoke or unusual odors are detected.**

  Contact your distributor in the event of this happening.

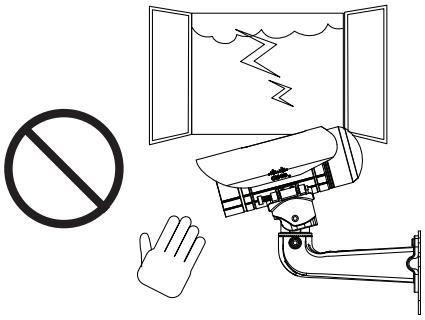
- **Refer to your user's manual for the operating temperature.**



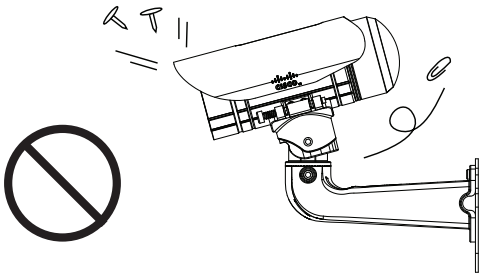
- **Do not place the Network Camera on unsteady surfaces.**



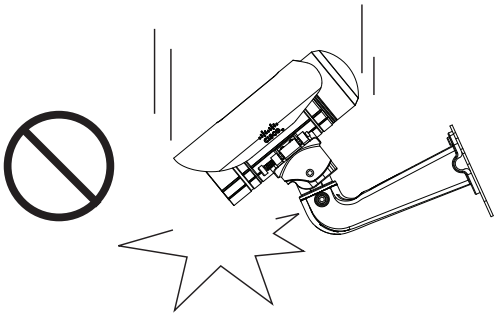
- **Do not touch the Network Camera during a lightning storm.**



- **Do not insert sharp or tiny objects into the Network Camera.**



- **Do not drop the Network Camera.**



Warning **Installation of the equipment must comply with local and national electrical codes.** Statement 1074

Warning **The power supply must be placed indoors.** Statement 331

Note If you use the IP camera outdoors, place the camera and the power supply in a suitable NEMA enclosure.

Warning **This product must be connected to a power-over-ethernet (PoE) IEEE 802.3af compliant power source or an IEC60950 compliant limited power source.** Statement 353

Caution Inline power circuits provide current through the communication cable. Use the Cisco provided cable or a minimum 24AWG communication cable.

Note The power adapter that you use with the IP camera must provide power that is within +/–10% of the required power.

Note The equipment is to be connected to a Listed class 2, limited power source.

Installing the IP Camera

To install the Cisco Video Surveillance 6400 IP Camera, perform the following steps.

Note Use Figure 2-1 as a visual reference for the following procedure.

Procedure

Step 1 Attach the alignment sticker to the wall. Drill three mounting holes and one larger cabling hole into the wall, hammer the three included wall anchors into the holes, and secure the mounting plate with included screws.

Step 2 Attach the camera anchor bracket to the side of the IP camera with the two included screws.

Step 3 (Optional) If you want to use an external power source for the 6400 IP camera, or use external devices such as sensors and alarms, complete the steps in the "Connecting External Power and I/O Cables" section on page 2-5 before continuing to Step 4.

Step 4 Feed the cable with an RJ 45 jack through the front opening of the wall mount bracket.

Step 5 Push the spring mortise and hook the camera anchor bracket onto the groove of the wall mount bracket.

Step 6 Secure the two screws on the other side of the wall mount bracket.

Step 7 Hang the wall mount bracket on the mounting plate.

Step 8 Secure the wall mount bracket to the mounting plate with the included screw.

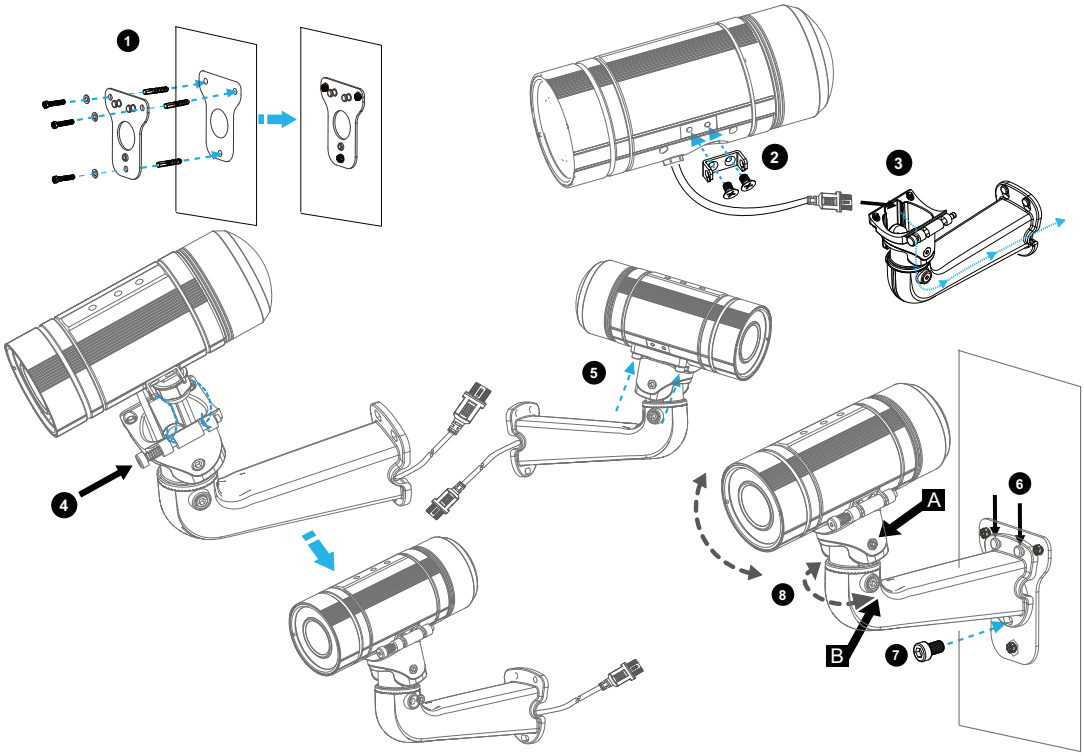
Step 9 Connect the RJ45 jack to your network using an Ethernet cable, or to ensure a waterproof network connection, complete the steps in the "Connecting a Waterproof Ethernet Cable" section on page 2-8.

Step 10 Adjust the angle of the wall mount bracket to achieve desired IP camera field of view.

Step 11 (Optional) Install the sun shield. For more information, see the "Installing the Sun Shield" section on page 2-9.

Step 12 (Optional) If the camera is being install in an area of high humidity, remove the back cover from the camera, place the included silica gel packet in the camera, and then replace the back cover onto the camera.

Figure 2-1 IP Camera Installation Steps



What to do next

After you install the IP camera, follow the instructions in Chapter 3, "Performing the Initial Setup of the IP Camera" to access and configure the IP camera.

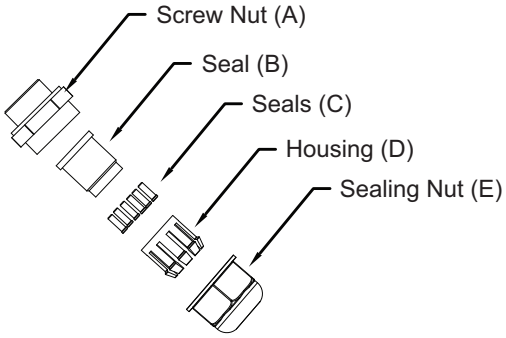
Connecting External Power and I/O Cables

The 6400 IP camera can be powered using Power over Ethernet (PoE), or by using an external power source. If an external power source is used, a power cable must be connected to the General Purpose I/O (GPIO) terminal block on the IP camera. Additionally, external devices that trigger alarms or respond to alarms can be connected to the GPIO terminal block using I/O cables. To avoid moisture damage to the IP camera, the optional external power cable and I/O cables, which are user-supplied, must pass through a waterproof connector.

To connect an external power cable or I/O cables for external devices, perform the following steps:

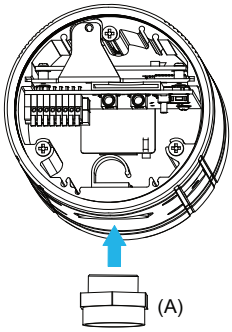
Procedure

Step 1 Disassemble the components of the waterproof connector into its individual components as shown below.

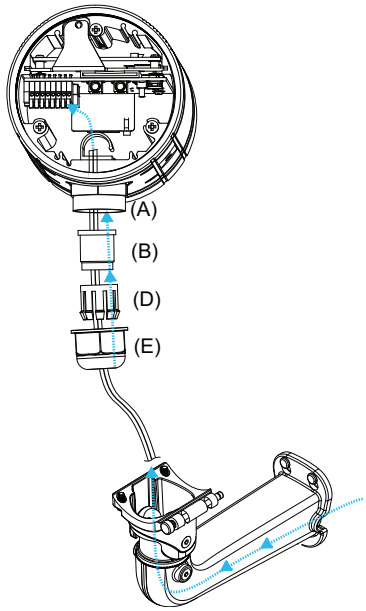


Step 2 Remove the back cover from the IP camera.

Step 3 Remove the rubber stopper from the bottom of the IP Camera and tightly secure the screw nut (A).



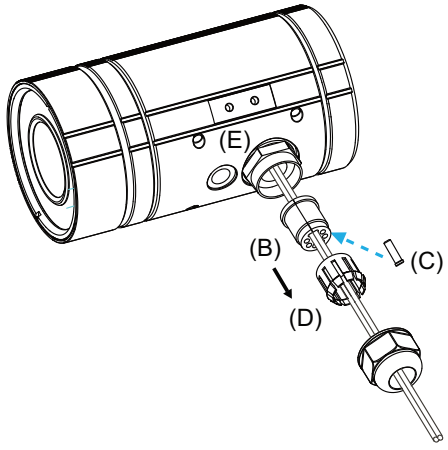
Step 4 Feed the external power cable and I/O cables through the wall mount bracket and the waterproof connector components (E –> D –> B –> A). Be sure to feed enough cable length through the waterproof connector to connect the cables to the GPIO terminal block.



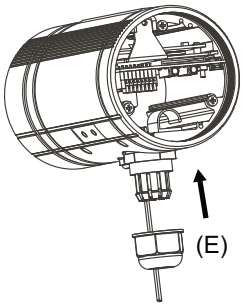
Note There are seven holes on the seal (B), and the widest hole with a crack on the side is specific for the power cable.

The recommended I/O cable gauge is 2.0 ~ 2.8 mm.

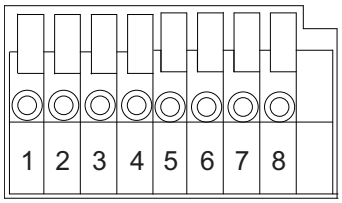
Step 5 Push the seal (B) into the housing (D), and to avoid moisture, insert the seals (C) into the empty holes on the seal (B).



Step 6 Secure the sealing nut (E) tightly.



Step 7 Connect the external power and I/O cables to the GPIO terminal block. The pin locations and descriptions are as follows:



Pin	Description
1	12 VDC-
2	12 VDC+
3	24 VAC
4	24 VAC
5	DI-
6	DI+
7	DO-
8	DO+

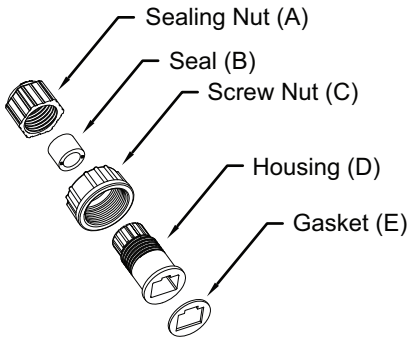
Step 8 Replace the back cover back onto the camera.

Connecting a Waterproof Ethernet Cable

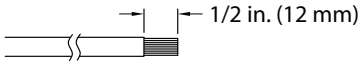
To connect the 6400 IP camera to an Ethernet cable with a waterproof connection, perform the following steps.

Procedure

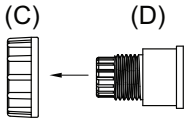
Step 1 Disassemble the components of the waterproof connector into its individual components as shown below.



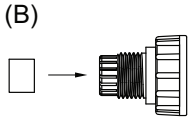
Step 2 Strip about 1/2 inch (12 mm) of the sheath off the end of an Ethernet cable.



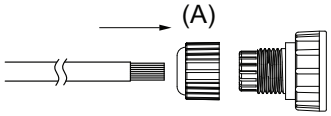
Step 3 Insert the housing (D) into the screw nut (C).



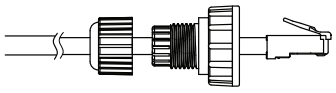
Step 4 Insert the seal (B) into the housing (D).



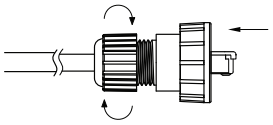
Step 5 Insert the stripped Ethernet cable through the sealing nut (A) and the housing (D).



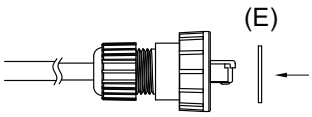
Step 6 Clamp the cable with an RJ45 plug.



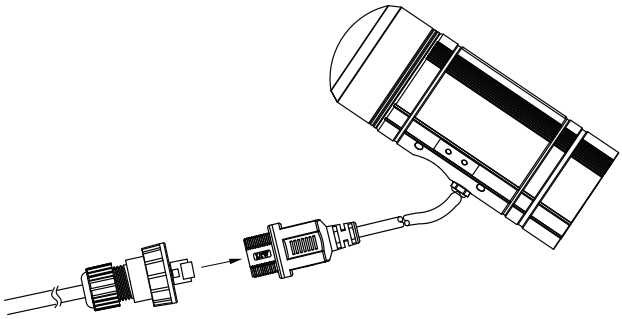
Step 7 Push the RJ45 plug into the housing (D) and tighten the sealing nut.



Step 8 Attach the gasket to the front surface of the housing (D).



Step 9 Connect the Ethernet cable to the RJ45 jack and tighten the waterproof connector.

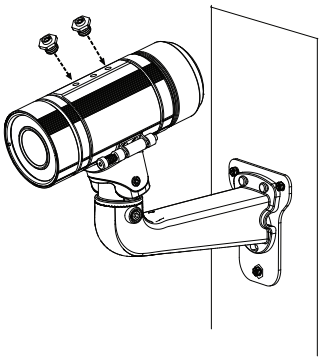


Installing the Sun Shield

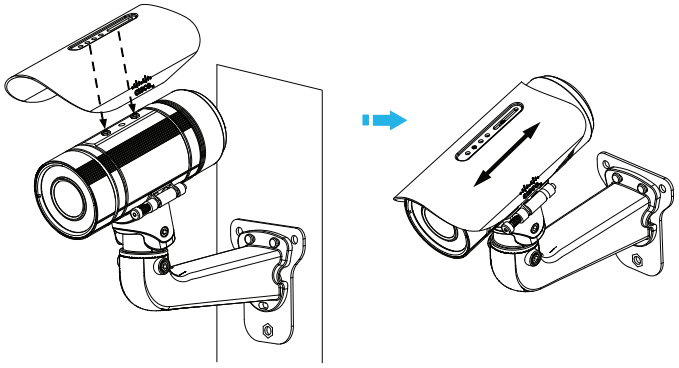
To install the sun shield, perform the following steps.

Procedure

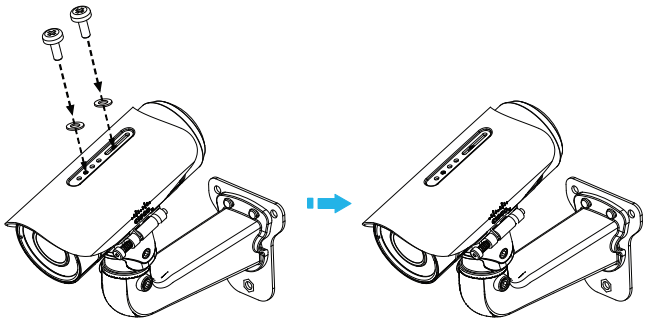
Step 1 Attach the two included standoff screws to the top of the 6400 IP camera.



Step 2 Place the sun shield on top of the two standoff screws and slide it backward or forward to the desired position. Ensure that the holes in the top of the standoff screws are visible through the holes in the sun shield.



Step 3 Use the two included screws to secure the sun shield to the two standoff screws.



CHAPTER 3

Performing the Initial Setup of the IP Camera

After you install IP camera as described in the Chapter 2, "Camera Installation," or after you perform a factory reset procedure, you must access the IP camera and make initial configuration settings. These settings include administrator and root passwords, and whether the IP camera can be accessed through an HTTP connection in addition to the default HTTPS (HTTP secure) connection.

To make these configuration settings, you connect to the IP camera from any PC that is on the same network as the IP camera. The PC must meet these requirements:

- Operating system—Microsoft Windows 7 (32-bit and 64-bit)
- Browser—Internet Explorer 8.0 (32-bit only)

In addition, you must know the IP address and default login credentials of the IP camera. By default, when the IP camera powers on, it attempts to obtain an IP address from a DHCP server in your network. If the camera cannot obtain an IP address through DCHP within 90 seconds, it uses a default IP address of 192.168.0.100. The default login credentials (Username/Password) are admin/admin.

To connect to the IP camera for the first time and make initial configuration settings, perform the following steps. You can change these configuration settings in the future as described in the *Cisco Video Surveillance 6000 Series IP Camera Configuration Guide*.

Before you Begin

The Microsoft .NET Framework version 2.0 or later must be installed on the PC that you use to connect to the IP camera. You can download the .NET Framework from the Microsoft website.

Procedure

Step 1 Start Internet Explorer, enter **HTTPS://*ip_address*** in the address field, and press **Enter**.

Replace *ip_address* with the IP address that the IP camera obtained through DHCP or, if the camera was unable to obtain this IP address, enter **192.168.0.100**.

The Login window appears.

Step 2 Enter the default login credentials:

Username: **admin**

Password: **admin**

The Initialization window appears.

Step 3 In the Password and Confirm Password fields of the admin row, enter a password for the IP camera administrator.

You must enter the same password in both fields. The password is case sensitive and must contain at least eight characters, which can be letters, numbers, and special characters, but no spaces. Special characters are: ! " # $ % & ' ( ) * + , - . : ; < = > ? @ [\ ] ^ _ ` { | } ~.

Step 4 In the Password and Confirm Password fields of the Root row, enter a password that is used when accessing the IP camera through a Secure Shell (SSH) connection.

You must enter the same password in both fields. The password is case sensitive and must contain at least eight characters, which can be letters, numbers, and special characters, but no spaces. Special characters are: ! " # $ % & ' ( ) * + , - . : ; < = > ? @ [\ ] ^ _ ` { | } ~.

You use the root password if you need to troubleshoot the IP camera through a SSH connection with the assistance of the Cisco Technical Assistance Center.

Step 5 In the Access Protocols area, check the **Enable HTTP** check box if you want to allow both HTTP and HTTPS connections to the IP camera.

By default, only the Enable HTTPS check box is checked, which allows only HTTPS (secure) connections to the IP camera.

Step 6 Click **Apply**.

The IP camera reboots and the Login window appears.

Step 7 After the IP camera reboots, start Internet Explorer and, in the Address field, enter the following:

protocol*://*ip_address

where:

- *protocol* is **HTTPS** or **HTTP**. (You can use HTTP only if you enabled it in Step 5.)
- *ip_address* is the IP address that you used in Step 1.

Step 8 If you are prompted to install ActiveX controls, which are required to view video from the IP camera, follow the on-screen prompts to do so.

The Home (System Information) window appears.

CHAPTER 4

Camera Management

This chapter provides information and instructions for managing the Cisco Video Surveillance 2620 IP Camera, and includes the following topics:

- Understanding the IP Camera User Interface, page 4-1
- Adjusting the IP Camera Focus and Zoom, page 4-4
- Powering the IP Camera On or Off, page 4-4
- Resetting the IP Camera, page 4-4
- Viewing Live Video, page 4-5

Understanding the IP Camera User Interface

After you log in to the IP camera, you can access the IP camera windows and perform a variety of administrative and user procedures.

The links and activities that you can see and access in the IP camera windows depend on your IP camera privilege level.

- Administrator—Can access all IP camera windows, features, and functions.
- Viewer—Can access the Camera Video & Control window with limited controls, and can access the **Refresh**, **Logout**, **About**, and **Help** links from that window.

IP Camera Window Links

The IP Camera user interface includes links that you use to access various windows and perform other activities. Table 4-1 describes each link and lists the IP camera privilege level that you must have to access the link.

Table 4-1 Links in the IP Camera Windows

Link	Description	Privilege Level
Refresh	Updates the information in the window that is currently displayed.	Administrator User
Home	Displays the Home window.	Administrator

Table 4-1 Links in the IP Camera Windows (continued)

Link	Description	Privilege Level
View Video	Displays the Camera Video & Control window. You may be prompted to install ActiveX controls when trying to access this window for the first time. ActiveX controls are required to view video from the IP camera. Follow the on-screen prompts to install ActiveX controls.	Administrator User
Setup	Provides access to the configuration menus for the IP camera.	Administrator
Logout	Logs you out from the IP camera.	Administrator User
About	Displays a pop-up window with model, version, and copyright information for the IP camera.	Administrator User
Help	Displays reference information for the window that is currently displayed.	Administrator User

IP Camera Windows

The IP camera user interface includes these main windows:

- Home window—Displays the system information that is described in Table 4-2.
- Setup window—Provides access to the IP camera configuration windows.
- Camera Video & Control window—Displays live video from the camera and lets you control a variety of camera and display functions.

Table 4-2 Home Window Information

Field	Description
General Information	
ID	Identifier of the IP camera.
Name	Name of the IP camera.
Current Time	Current date and time of the IP camera.
S/N	Serial number of the IP camera.
Firmware	Version of the firmware that is installed on the IP camera.
Codec	Version of the codec that is running on the IP camera.
Part Number	Cisco manufacturing part number of the IP camera.
Top Assembly Revision	Cisco assembly revision number.
Network Status	
MAC Address	MAC address of the IP camera.
Configuration Type	Method by which the IP camera obtains its IP address.
LAN IP	IP address of the LAN to which the IP camera is connected.
Subnet Mask	Subnet mask of the LAN to which the IP camera is connected.
Gateway Address	IP address of the gateway through which the IP camera is connected.
Primary DNS	IP address of the primary DNS server, if configured for the IP camera.
Secondary DNS	IP address of the secondary DNS server, if configured for the IP camera.
IO Port Status	
Input Port 1	Current state of input port 1 on the IP camera.
Output Port 1	Current state of output port 1 on the IP camera.
Stream 1 and Stream 2	
User	IP camera user name of each user who is accessing the primary video stream (Stream 1) or the secondary video stream (Stream 2) through a client PC or a third-party device. Be default, users appear in order of start time. To displays users in ascending order of any information in any corresponding column, click the column heading. Click a column heading again to reverse the display order.
IP Address	IP address of the client device.
Start Time	Time and date that the client accessed the video stream for this session.
Elapsed Time	Length of time that the client has been accessing the video stream.

Adjusting the IP Camera Focus and Zoom

To adjust the IP camera focus and zoom, perform the following steps while viewing video from the camera. For information about viewing video, see "Viewing Live Video" section on page 4-5.

Procedure

Step 1 Login to the IP camera.

The Home window appears.

Step 2 Click the **View Video** link.

The Camera Video & Control window appears.

Step 3 Verify that the field of view is correctly set.

Step 4 Click the **Focus/Zoom** toggle button located below the video pane.

Step 5 The focus and zoom controls appear.

Step 6 While watching the video pane, perform the following steps:

a. Move the **Zoom** slider until you achieve the desired zoom level.

b. Move the **Focus** slider until the video image is at its sharpest.

Step 7 (Optional) Click **Auto Focus** to have the IP camera automatically adjust its focus. To automatically adjust the focus to a particular region in the field of view, check the **Specify Region** check box and draw or select a region before clicking Auto Focus.

Powering the IP Camera On or Off

The IP camera does not include an on/off switch. You power it on or off by connecting it to or disconnecting it from a power source. When you power off the IP camera, configuration settings are retained.

To power on the IP camera, take either of these actions:

- Use an STP (shielded twisted pair) Category 5 or higher network cable to connect the IP camera to a network switch that provides 802.3af compliant PoE.
- Use an optional 12 VDC or 24VAC power adapter to connect the IP camera to a wall outlet

To power off the IP camera, take either of these actions:

- If the IP camera is receiving PoE, disconnect the network cable
- If the IP camera is receiving power through the power adapter, unplug the adapter from the wall or disconnect it from the camera

Resetting the IP Camera

You reset the IP camera by pressing the Reset button on the IP Camera (see Figure 1-1 on page 1-2). There are various reset types, as described in Table 4-3.

You also can also perform these reset operations from the Maintenance Settings window as described in the *Cisco Video Surveillance 6000 Series IP Camera Configuration Guide*.

Table 4-3 Resetting the IP Camera

Reset Type	Procedure	Remarks
Reboot.	Press and immediately release the Reset button.	This action is equivalent to powering the IP camera down and then powering it up. Settings that are configured for the IP camera are retained.
Factory reset.	Press and hold the button for at least 15 seconds.	Sets all IP camera options to their default values. After you perform this procedure, follow the steps in the "Performing the Initial Setup of the IP Camera" section on page 3-1.

Viewing Live Video

After you install and set up the Cisco Video Surveillance IP Camera, you can connect to the IP camera through Internet Explorer and access the Camera Video & Control window to view live video.

The Camera Video & Control window also provides for controlling the video display, configuring preset positions, and controlling certain IP camera functions. Available controls depend on the privilege level of the user.

To view live video, log in to the IP camera, then click **View Video** in the IP camera Main window menu bar. The Camera Video & Control window appears. This window displays live video from the camera and lets you control a variety of camera and display functions.

The controls that you see in the Camera Video & Control window depend on your IP camera privilege level and the configurations settings for the IP camera. Users with the Administrator privilege can access all controls. Users with the Viewer privilege do not have access to the following controls:

- Video image controls
- Motion detection controls

Table 4-4 describes the controls in the Camera Video & Control window.

Table 4-4 Camera Video & Control Window Controls

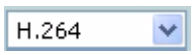
Control	Description
Video controls	
Video Codec drop-down list  	Choose the codec for video transmission (H.264 or MJPEG). You can choose H.264 only if the primary video stream (channel 1) is enabled. You can choose MJPEG only if the secondary video stream (channel 2) is enabled.

Table 4-4 Camera Video & Control Window Controls (continued)

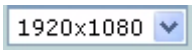
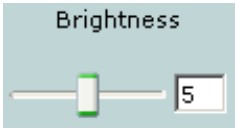
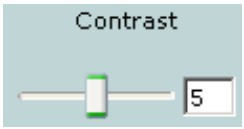
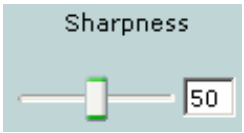
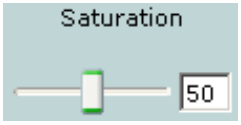
Control	Description
Video Resolution drop-down list 	Choose the resolution for video transmission. The resolutions in this drop-down list depend on the video standard that you selected. The default value for H.264 is 1920 x 1080. The default value for MJPEG is 1024 x 576. You cannot configure a secondary stream if you configure this resolution for 1920 x 1080.
Right Arrow toggle button	Click the Right Arrow to display the video image controls. The button changes to the Left Arrow button. Click the Left Arrow button to hide the video image controls. The button changes to the Right Arrow button.
Left Arrow toggle button	
Video image controls **Note** These controls appear when you click the Right Arrow in the Video Control area.	
Brightness slider 	To control the brightness of the video image, drag the slider, or enter a value from 1 through 10 and press the **Enter** key. A higher value increases the brightness and a lower value decreases the brightness. For example, if the IP camera is facing a bright light and the video appears too dark, you can increase the brightness. The default value is 5.
Contrast slider 	To control contrast of the video image, drag the slider, or enter a value from 1 through 10 and press the **Enter** key. A higher value increases the contrast and a lower value decreases the contrast. The default value is 5.
Sharpness slider 	To control the sharpness of the video from the IP camera, drag the slider, or enter a value from 1 through 100 and press the **Enter** key. A higher value increases the sharpness and a lower value decreases the sharpness. The default value is 50.
Saturation slider 	To control the saturation of the video from the IP camera, drag the slider, or enter a value from 1 through 100 and press the **Enter** key. A higher value increases the saturation and a lower value decreases the saturation. High saturation provides a vivid, intense color for a video image. With less saturation, the video image appears more muted and gray. The default value is 50.
Restore button	Resets white balance, brightness, contrast, sharpness, saturation, and hue to their default values.

Table 4-4 Camera Video & Control Window Controls (continued)

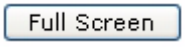
Control	Description
Image tools	
Hotspot Zoom button	Click this latch button to enables the digital zoom feature, which provides five-step digital zooming in for the normal (not full screen) video display. Click this button again to disable the digital zoom feature. To perform a digital zoom, engage the **Hotspot Zoom** button and click the video display. The first five clicks zoom the display. The sixth click returns to unzoomed display.
Hotspot Pan/Tilt button	Click this latch button to enable the hotspot pan/tilt feature, which lets you pan and tilt the IP camera toward a point that you click in the video display. To perform a hotspot pan/tilt action, engage the **Hotspot Pan/Tilt** button, then click the video image at the location toward which you want the IP camera to pan and tilt. This feature require that the IP camera be installed with a pan/tilt mount that supports the Pelco D protocol and that pan and tilt functions are enabled.
Save Snapshot button	Captures and saves a the current video image as a .gif file or a .jpg file in the location of your choice and with the file name of your choice. When you click this button, the Snapshot window appears. Click **Save** and follow the on-screen prompts to save the image with the name and in the location that you want.
Flip button	Rotates the video image by 180 degrees.
Mirror button	Reverses the video image.
Restore button	Displays the default video image, which is not rotated and not reversed.
Full Screen button 	Displays the video image in full screen mode. To return to normal display mode, click the full screen image.
Motion detection	
Up Arrow toggle button	Click the Up Arrow to display the motion detection controls. The button changes to the Down Arrow button. Click the Down Arrow button to hide the motion detection controls. The button changes to the Up Arrow button.
Down Arrow toggle button	

Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Motion detection controls	
Note These controls appear when you click the Up Arrow in the Motion Detection area and are available only viewing the primary (H.264) stream.	
Enable Motion Detection check box	Enables the motion detection feature and displays a grid over the video image. When motion detection is enabled, the IP camera monitors activity in the video field areas that you specify. If activity at a defined level occurs in any of these areas, the IP camera generates an alert and takes the configured actions. To designate specific areas that the IP camera monitors for activity, select the areas by clicking each grid cell over the area. A red border indicates a selected area. To deselect an area, click it again. You can configure the following levels for areas that the IP camera monitors for activity: • Sensitivity—Designates the relative amount of activity that the IP camera must detect in the area before it generates an alert. A lower value means that more, or faster, activity is required to trigger an alert. A higher value means that less, or slower, activity is required. The default value is 80. • Threshold—Designates the percentage of pixels that the IP camera must identify as changed in the area before it generates an alert. The camera detects pixel changes at the defined sensitivity level. The default threshold value is 10. To configure sensitivity or threshold, right-click a grid cell that has a red border and then drag the Sensitivity and Threshold sliders to the desired values. Alternatively, enter a value from 1 through 100 for an option and press the **Enter** key. To reset the sensitivity and threshold to their default values of 50, click **Restore**. These configuration settings affect the cell that you select. If the cell is part of a group of horizontally or vertically (but not diagonally) adjacent cells, the settings affect all cells in the group.
Full Screen check box	Becomes available when you click check Enable Motion Detection check box. Check the Full Screen check box to cause the IP camera to examine the entire video field for activity. You can configure the following items for this video field: • Sensitivity—Designates the relative amount of activity that the IP camera must detect in the area before it generates an alert. A lower value means that more, or faster, activity is required to trigger an alert. A higher value means that less, or slower, activity is required. The default value is 80. • Threshold—Designates the percentage of pixels that the IP camera must identify as changed in the area before it generates an alert. The camera monitors for pixel changes at the defined sensitivity level. The default threshold value is 10. To configure sensitivity or threshold, right-click anywhere in the video field border and then drag the Sensitivity and Threshold sliders to the desired values. Alternatively, enter a value from 1 through 100 for an option and press the **Enter** key. To reset the sensitivity and threshold to their default values of 50, click **Restore**.

Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Restore button	Deselects all areas in the video field that you have selected for motion detection monitoring.
Save Settings button	Save the current motion detection configuration.

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